

ACADEMY NEWS LETTER

Number 33

September, 1942



LANDSCAPE, SOUTH CHINA

“The magic powers of heaven and earth are ever combined to form perfect results: so the pure essences of hill and water become solidified into precious jade.” T’ang Jung-tso

Published Monthly by

CALIFORNIA ACADEMY OF SCIENCES

GOLDEN GATE PARK • SAN FRANCISCO

CALIFORNIA ACADEMY OF SCIENCES

GOLDEN GATE PARK • SAN FRANCISCO



September Announcement

THE REGULAR SEPTEMBER MEETING of the California Academy of Sciences will be held in Room 214, SIMSON AFRICAN HALL on WEDNESDAY AFTER-NOON, September 2, 1942, at 3:30 o'clock. The speaker will be Professor Austin F. Rogers of Stanford University, whose subject will be:



DR. ROGERS, who retired in June after thirty-seven years of service as Professor of Mineralogy and Petrography in Stanford University, is a widely known authority on crystals, precious and semi-precious stones and, indeed, on minerals of all kinds. He has had a very special interest in jade since the discovery of this substance in California some four years ago. Dr. Rogers has brought together a representative collection of jade and is, moreover, personally familiar with some of the leading jade collections of the world.

The name jade is commonly restricted to two minerals, jadeite and nephrite. These minerals, while principally known by reason of their use in Chinese art, are found chiefly in other parts of the world. Much of the jadeite used in China is imported from upper Burma. Nephrite occurs in Eastern Turkestan, New Zealand, Siberia, Alaska, and elsewhere. Particular local interest attaches to the fact that genuine nephrite has been found in California along the Monterey coast. Dr. Rogers did the mineralogical work which established the validity of this discovery.

Dr. Rogers will discuss jade both as a mineral and as the medium of a highly developed Oriental art. His lecture will be illustrated with lantern slides in kodachrome.

The public is cordially invited to hear Dr. Rogers.



APPLICATIONS FOR MEMBERSHIP

NOTICE is hereby given to all CORPORATE MEMBERS that the Council at its meeting, August 21, 1942, approved the applications of Mr. Claude W. Cain, Professor Charles Wesley Chesterman, Mr. R. B. Hutcheson, and Mr. John L. Sperry for MEMBERSHIP and Mr. Richard Lefrancois and Mr. Wilfred Graham Metson, Jr., for STUDENT MEMBERSHIP in the California Academy

of Sciences. If no objection to the election of these applicants be received at the office of the Academy within two weeks after August 27, 1942, they will be considered elected.



NUTRITION EXHIBIT ENLARGED

THE EXHIBIT on "Nutrition for Wartime Needs" prepared by the Academy in coöperation with the Northern California Public Health Association (cf. Academy News Letter for April, 1942) has returned from its travels in this and adjoining states, and is again on display in the Academy's Museum. A recent gift from the Western Branch, American Public Health Association, has permitted instructive additions to the exhibit to be made. It has been attractively lighted and now occupies one entire end of the corridor adjoining the North American Hall.



A MENU FOR THE FIELD OF ACTION

AS A RESULT of many newspaper and magazine articles the general public is quite conscious of the thoroughness with which the United States Army has dealt with the problem of feeding the men in our armed forces. The Quartermaster Corps is one of the most efficiently and scientifically organized services in the world; consequently our soldiers are in all probability the best fed group of men in the country.

The ordinary food of any army camp, however, is not of so much interest to the average person as are some of the special rations used by units engaged in actual combat where field kitchens are out of the question. To show those who perhaps anticipate using these rations some day what they may expect to partake of, an example of the United States Army Field Ration K is now on exhibit at the Academy. This is one of the several types of rations used by parachute and mechanized troops, and on various occasions where it is necessary to have a light and compact ration. Each of the three meals for the day is contained in separate, small packages, covered with waterproof paper. Their contents may be itemized as follows:

Breakfast Unit

- | | |
|--|---------------------------|
| 1 package defense biscuits | 2 packages soluble coffee |
| 1 package compressed graham biscuits | 3 tablets sugar |
| 1 can veal luncheon meat | 1 stick chewing gum |
| 1 package malted milk—dextrose tablets | |

Dinner Unit

- | | |
|--------------------------------------|------------------------------|
| 1 package defense biscuits | 1 tube concentrated bouillon |
| 1 package compressed graham biscuits | 1 stick chewing gum |
| 1 can pork luncheon meat | 1 package dextrose tablets |

Supper Unit

- | | |
|--|----------------------------|
| 1 package defense biscuits | 1 bar U. S. Field Ration D |
| 1 package compressed graham biscuits | 3 tablets sugar |
| 1 can cervelat sausage | 1 stick chewing gum |
| 1 package lemon juice powder (synthetic) | |

Ration K is highly palatable and, notwithstanding its compact size, contains calories and vitamins sufficient to maintain full health and vigor.



SAVE—SUBSTITUTE—SALVAGE

EVERY DAY millions of Americans who have long been steeped in the tradition of the land of plenty are unconsciously throwing away materials that can no longer be replaced and which are vitally needed in war industries. Many other materials that are as abundant as before must be diverted from their normal uses to serve the demands of the war effort. It is here that the problem of substitutes enters the picture. Industrial and scientific laboratories throughout the nation are working constantly to find suitable replacements for substances we have heretofore considered indispensable. No doubt great advances will be made, as was true in World War I, and many of our so-called necessities will be permanently replaced by synthetics far superior to the original.

The Academy through its Committee on Latent Natural Resources has devoted a great deal of attention to the search for substitutes and to the development of new sources of materials essential to prosecution of the war or to civilian needs during war. This type of effort, together with those exemplified in the campaigns to sell war bonds and stamps and to induce housewives to save tin cans and fats, is dramatized in a new exhibit at the Academy featuring the slogan "Save—Substitute—Salvage."



WAR GASES

SO MANY inquiries have been made, and so much popular interest has been expressed in the subject of war gases, that it seems desirable to publish a digest of the able and authoritative lecture on this topic which was given at the meeting of the Academy on July 1, 1942, by Dr. Chauncey D. Leake, Professor of Pharmacology in the University of California Medical School. Dr. Leake served in the Chemical Warfare service in the preceding World War, and is at present Consultant on War Gases to the United States Public Health Service.

Dr. Leake spoke in part as follows:

In warfare anything goes. The only rules are those which the winner can enforce. New ways of fighting usually provoke fear and horror. War gases are feared and are thought to be horrible chiefly because people know little about them, and because they are thought to be new. However, they are as old as war itself. Primitive men used fire and smoke to drive enemies away; the Greeks mixed pitch and sulfur to make a stinking mess when ignited and hurled at their enemies; in the total warfare of medieval Europe, besieged townspeople dumped burning oil and lye on their attackers, and England considered the use of sulfur-dioxide in the Crimean War. It was not used because England was interested in promoting the idea of "humane" warfare,—a pleasant idea, provided that its promoter wins, which was the point behind Premier Churchill's and President Roosevelt's recent warning to our enemies

against war gases. In 1915 Germany first successfully used poison gas, but failed to follow through with its advantage, until too late, when the Allies developed adequate protection and gases of their own. In a war of rapid movement, as now, no army wants to be bothered by gas, because, although protection is easy, it so greatly reduces speed and efficiency.

Psychological Factors Regarding War Gases: Ignorance promotes fear; fear leads to panic in a crisis. Most of our people are ignorant of war gases, therefore are afraid of them, therefore are likely to panic if the enemy uses them against us. The enemy would like us to panic. It is necessary for everyone to become familiar with what war gases are, and how one may readily protect oneself against them, in order that our panic potential from war gases may



ORIGINAL PROPONENTS OF GAS WARFARE

be reduced so low that there will be no inducement to our enemy to use them against us.

Demand for gas-masks is an index to our enemy of our panic potential for war gas. CIVILIANS DO NOT NEED GAS-MASKS FOR PROTECTION, except those few police, firemen, air-raid wardens, and ambulance crews who have to be outside in an attack. We civilians should realize that the rubber, steel, and man-hours of labor required to produce gas-masks enough to equip our population near the coasts, could better be used to make offensive weapons with which to beat our enemy in his own back-yard.

War gases are not the horrible things they are commonly supposed to be. A civilian using his head can easily protect himself against them,—much easier for example than he can against a gangster coming at him with him with a bayonet. In World War I the mortality from gas injury alone was 2 per cent, while of those injured by shot or bayonet, 24 per cent died. In 1929 a survey of those reported injured by exposure to gas revealed that the incidence of various diseases, whether of lungs, heart, or what not, was the same as for the age group of the general population. Exposure to war gas therefore does not carry the danger commonly believed.

What the War Gases Are: Half the weight of high explosive goes to form carbon monoxide, a poisonous gas without odor, which fortunately quickly

dissipates in the open. The rest forms "nitrous fumes" which are heavy, hot, and brown-colored, and which will act like war gas to injure eyes, nose, throat, and lungs. Hot smoke from incendiaries will do similar damage. The war gases most likely to be used will be mixtures of such chemicals as chloropicrin, mustard gas, lewisite, or their chemical relatives. These are thin oils, which evaporate slowly. The oils are not soluble in water, and are decomposed by water and alkali, or by kitchen bleach solution ("Clorox"). The vapors are heavier than air, and roll along the ground with the wind, fanning out 20 per cent as they go. They may come to us in shells from subs or planes, or may be sprayed from high-flying planes. Real war gases or gas from bombs or incendiaries may irritate the eyes, nose, throat, lungs, and blister the skin like sunburn or poison-oak.

Principles of Civilian Protection against War Gases: These agents act insidiously and to be effective, protection must be instituted as soon as it is suspected that war gases are in the air. This means that "first aid" is too late. *Self-aid* is necessary to prevent injury. It is unwise to try to learn to identify single war gases by smell or other means, for they will be mixed in use. Besides, smell is an indefinite procedure, and precious time may be lost trying to decide which gas is present. Protection should be devised on the least common denominator of effectiveness against anything likely to be used. This makes it unnecessary to learn specific methods of handling exposure to any specific gas. Careful study suggests the following principles; (1) obey air-raid rules, taking refuge during an alarm in an air-raid shelter or black-out room, with doors and windows shut, and the windows screened or heavily curtained on the inside to prevent injury from flying glass, if bombing occurs; (2) if the shelter is broken open by bombing, and if war gases are suspected by fogs, peculiar odors, smarting or stinging of the eyes, nose or throat, or by coughing, sneezing, or gasping, or by any other suspicions, tie a cloth soaked in baking-soda solution, or diluted kitchen bleach solution, over the nose and mouth to breathe through, keep it wet, shut one eye and squint through the other, and lie down with head in arms; (3) if eyes, nose, or throat are irritated, wash them with a solution of a teaspoonful of baking soda in a glass of water; (4) if splashes of liquid are suspected on the skin or clothes, throw the outer clothing out the window, blot the skin-splash promptly and repeatedly with a cloth wet with kitchen bleach solution, lather thoroughly and frequently with soap and rinse copiously with water. DO NOT USE KEROSENE, which is a solvent that will spread war gases over the skin. If subsequent injury results, the treatment is symptomatic at a casualty station or hospital.

These considerations were fully reviewed early in 1942 by the San Francisco Committee on the Medical Aspects of War Gases. Special discussions along these lines have been widely published on the West Coast for civilian information. Experience has shown that these suggestions for "self-aid" in handling suspected war gas exposure are appreciatively received by the public because they are simple and sensible. Recently these suggestions in substance have been included in "official" recommendations.

IT IS SAFE to say that a museum is commonly regarded as providing an atmosphere of peace. Opinions of the character of this peace vary, from the hopeful estimate that it is the peace of intellectual concentration to the pessimistic, not to say irreverent, view that it savors of the peace of a mausoleum.

Whatever one's view of the nature of the spiritual environment provided by the museum, there is no question that museums respond to the impact of war. Of the Academy's peacetime staff of about forty persons, already more than one fourth are either engaged in active military service, or in undertakings directly related to the war. Those who remain are dividing their time between carrying an overload, trying to get physical requirements waived to get into the Army or Navy, and thinking up ways in which the museum may promote the war effort.

In the August issue of the National League for Women's Service Magazine, Dr. Robert C. Miller, Director of the California Academy of Sciences has an article on "The Role of the Museum in War Time," from which the following excerpts are taken:

The outbreak of war in the Pacific brought to the staffs of all museums on this coast three very pressing problems: 1. Safety of the collections. 2. Safety of the public when in or about the museum buildings. 3. Modification of the museum program to best serve the war effort.

Precautions involved shifting most evening meetings to the afternoon; acquiring a supply of plywood to board up possible broken windows, and canvas to cover any shattered skylights; and the microfilming of 18,000 pages of records, going clear back to the minutes of the first meeting of the Academy on April 4, 1853.

Precautions for the safety of the public in event of an air-raid were worked out with the coöperation of the San Francisco Fire Department. The general nature of such precautions is too well known to need discussion here; but it may be pointed out that museums present a peculiar problem because of the large amount of glass normally present. In cleaning up the Bristol Museum after a bombing, 70 tons of broken glass were removed. Safety of the public requires finding or preparing places in the buildings where people can congregate and be safe from flying glass.

When all reasonable preparations of this character have been made for the protection of museum properties and for the personal safety of visitors in event of a bombing, the staff becomes free to devote attention to ways and means of promoting the war effort. I suppose every museum in America has modified its program in greater or less degree to this end; and the aggregate influence of this effort, while impossible to evaluate, must be tremendous.

In this Museum immediate steps were taken to educate the public in the handling of incendiary bombs. A poster exhibit was set up in the Museum, and the January issue of the *Academy News Letter*, containing a carefully prepared article on "Bombs and What to Do About Them," was distributed free to Museum visitors.

Next came an exhibit on "Nutrition for Wartime Needs," which was pre-

pared by the Museum staff in coöperation with the Northern California Public Health Association and the Western Branch of the American Public Health Association. This, a portable exhibit, has been shown in Palo Alto, San Jose, and Seattle, and is at the time of this writing again on exhibit in the Academy's Museum in Golden Gate Park. The April issue of the *News Letter* was devoted to practical information on nutrition and it also was freely distributed. Readers of this magazine may still obtain copies on request.

Camouflage is a subject of great interest at the present time, and most museums in the Bay Region have featured exhibits along this line. As the present writer pointed out in an article in the October issue of the *Women's City Club Magazine*, the principles of camouflage were developed through study of nature and the methods by which animals conceal themselves for purposes of offense or defense. The dioramas in a natural history museum afford an excellent study both of camouflage in nature and of means of realistically reproducing natural objects and natural scenery.

In emphasizing these specific educational undertakings, we must not forget the intangible but highly important contribution that museums make in a general way to wartime morale. The rubber shortage, transportation difficulties, and pressure of work prevent people from getting away on extended trips and require them to exploit the resources nearer home. Persons now visit museums on their own account, who in normal times rarely came near such institutions except when showing visitors the sights of the city. Soldiers and sailors, on their limited leaves and with restricted funds, find pleasure and profit in visiting these free public institutions.